

Unmanned Aerial Vehicle Diode Laser Sensor for Methane, Phase I

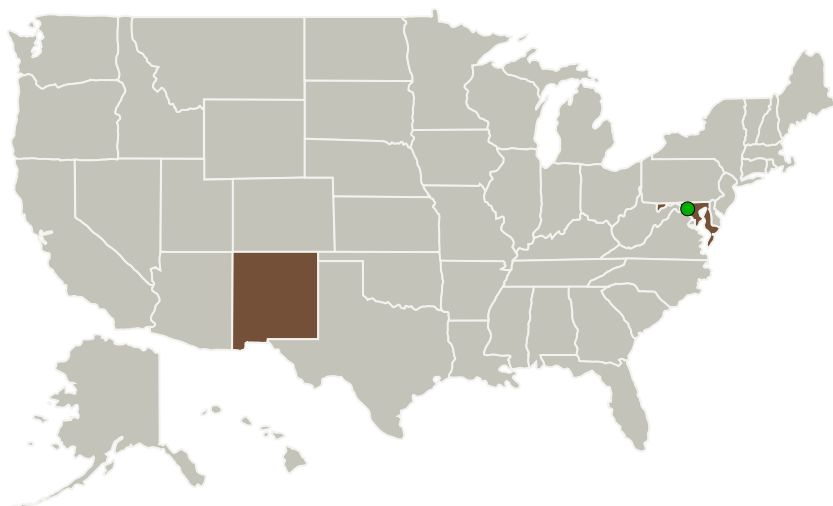
Completed Technology Project (2014 - 2014)



Project Introduction

A compact, lightweight, and low power diode laser sensor will be developed for atmospheric methane detection on small unmanned aerial vehicles (UAVs). The physical specifications of this sensor will be considerably smaller than current NASA laser sensors. The smaller sensor specifications will enable use of carrier UAVs that are similar in size to a large model aircraft. Using smaller UAVs for measurements will result in large cost savings. The proposed sensor will use an open path optical system that will provide superior spatial resolution in the measurements.

Primary U.S. Work Locations and Key Partners



Unmanned Aerial Vehicle Diode Laser Sensor for Methane Project Image

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Organizations Performing Work	Role	Type	Location
Southwest Sciences, Inc.	Lead Organization	Industry	Santa Fe, New Mexico
 Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations

Maryland	New Mexico
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Project Transitions



June 2014: Project Start



December 2014: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140581>)

Images



Project Image

Unmanned Aerial Vehicle Diode
Laser Sensor for Methane Project
Image

(<https://techport.nasa.gov/image/128332>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Organization:

Southwest Sciences, Inc.

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

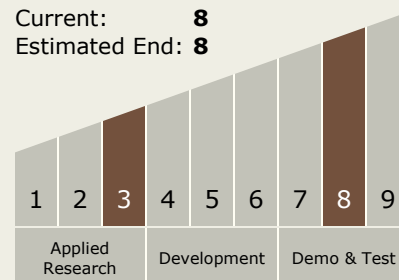
Carlos Torrez

Principal Investigator:

Mark Paige

Technology Maturity (TRL)

Start: 3
Current: 8
Estimated End: 8



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System